to one another, as well as to the vessels, nerves, and bones, remain completely unaltered. The only racial characteristics, therefore, which are dwelt upon are those of the skeleton, and especially of the skull, in illustration of which the authors reproduce some of the excellent figures of Nathusius.

Classifying them with regard to their racial peculiarities, the skulls of dogs are divided into two large groups, viz. (1) *Dolichocephalic*, to which belong such dogs as the greyhound, collie, poodle, St. Bernard, and Newfoundland; and (2) *Brachycephalic*, including, amongst others, the pug and bulldog. These groups, however, do not include all dogs, some varieties being intermediate. The difference depends upon the relative development of the face as compared with the brain-capsule, for in the dolichocephalic the face is about two-thirds as long as the brain-capsule, while in the brachycephalic it is only about one-third as long. The former have a strongly marked, bony sagittal crest and a narrow brain-capsule; in the latter the sagittal crest is absent, and the brain-capsule wide. The jaws and dental arches are straight and extended in the dolichocephalic; short and rapidly converging in the brachycephalic; in the former the premolars are set straight, with well-marked intervals; in the latter they are closely packed, and set obliquely. The racial peculiarities of all the several bones of the skeleton are referred to, and a comprehensive table of pelvic measurements of the different races is given.

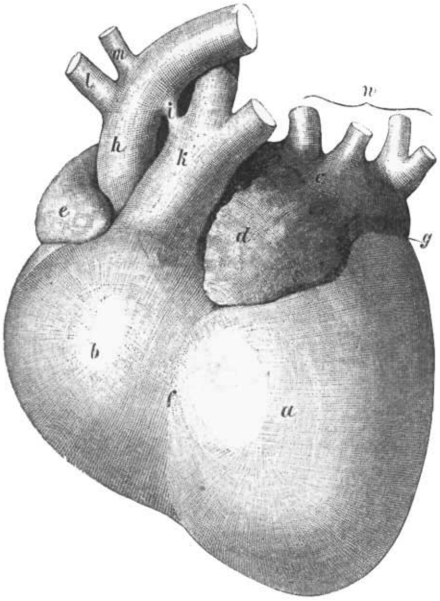

FIG. 4.—Dog's heart, viewed from the left side. *a*, left ventricle; *b*, right ventricle; *c*, left auricle; *d*, its auricular appendage; *e*, right auricle; *f*, groove between right and left ventricles; *g*, coronary groove; *h*, aorta; *i*, ligamentum Botalli; *k*, pulmonary artery; *l*, innominate artery; *m*, left subclavian; *n*, pulmonary veins.

It would carry us too far to draw attention to all the details of a work like this, but there are certain points which deserve special mention. Amongst these may be enumerated the exact manner in which each individual bone is described and illustrated; the descriptions of the teeth, short but sufficient, including their dates of eruption; the account of the individual muscles and groups of muscles, with their action; the descriptions of the viscera and of the vascular and nervous systems; and last, but not least, the general excellence of the illustrations, in which the muscles, the blood-vessels, and the nerves are shown up by the aid of colours and differences of shading in a manner which gives a diagrammatic clearness to what appear to be drawings made from actual dissections. Special mention may also be made of the section devoted to the cerebral hemispheres, the convolutions and fissures of which are minutely described and illustrated both by diagrams and artistic representations. The diagrams which are used to elucidate the distribution of the vagus and sympathetic nerves are a model of clearness; a reference to recent observations on the distribution of white and grey fibres in these and other nerves would, however, have added much to the physiological value of this section. It is also to be remarked that the sense-organs are somewhat lightly touched upon; but in the case of the eye and its connections with the brain, the student is enabled to supplement the account given by the authors by a bibliography of the subject extending over the last twenty-five years.

A table showing the arterial and nervous supply of all the organs of the body, including each muscle and the several parts of the skin, occupies about twenty pages at the end of the book, and will add greatly to its value. An excellent index must also be mentioned, especially as an index is often conspicuous by its absence in German scientific works. In its printing and general get up the book is worthy of the pains which have been bestowed upon it by its authors and of the distinguished physiologist, Prof. Carl Ludwig, to whom they have inscribed a dedication. It is to be hoped that we may soon be able to welcome this work in an English form.

NOTES.

A COMMITTEE has been formed at Cambridge to raise a fund to obtain a portrait of Prof. Michael Foster. The portrait will be presented either to the University or to Trinity College, as the subscribers may decide. Among the members of the committee are the Vice-Chancellor, the Provost of King's, the Masters of Trinity, Jesus, and Downing Colleges, Sir George Stokes, M.P., Sir George Paget, Sir George Humphry, Prof. Jebb, M.P., Prof. Darwin, Prof. Newton, Prof. Roy, Prof. Stanford, Prof. Stanton, and Prof. Thomson. Dr. Lea, of Gonville and Caius College, is the treasurer of the fund.

THE celebration of Prof. von Helmholtz's seventieth birthday, deferred from August 31, was held on Monday last at Berlin. He was congratulated in the warmest terms by the Minister of Education, and by representatives of many scientific Societies. Prof. du Bois Reymond, acting on behalf of the Helmholtz Medal Committee, handed to Dr. von Helmholtz the first medal, and said that numerous contributions to the Helmholtz Fund had flowed in from all parts of the world, and that the Berlin Academy of Science, with the Emperor's permission, had undertaken the trusteeship. In the evening over 500 guests attended a banquet at the Kaiserhof Hotel.

WE regret to have to record the death of Dr. H. K. H. Hoffmann, one of the most distinguished German botanists. He died on October 27. He had been for many years Professor of Botany at Giessen and Director of the Botanic Institution there. Prof. Hoffmann was in his seventy-third year.

WITH reference to the article on "Existing Schools of Science and Art" in NATURE of October 8 (vol. xliv. p. 547), Mr. O. S. Dawson writes:—"It was stated at the meeting that the St. Martin's School of Art 'had closed its doors.' I find this to be incorrect. Certain changes have been made, but I am glad to be able to state that this school (one of the oldest and best known in the country) is flourishing under the new head-master, Mr. Allen."

THE interest excited by the question of the compulsory study of Greek brought to Cambridge on Thursday, last week, the largest number of members of the Senate ever gathered in the Senate House. The proposal that the question should be made a subject of official inquiry was rejected by 525 votes against 185.

THE Museums and Lecture Rooms Syndicate, Cambridge, have accepted on behalf of the University a cast of the model executed by the late Sir J. E. Boehm, R.A., for his statue of Mr. Charles Darwin. The cast has been presented by Mr. Darwin's family, and is now placed in the lecture-room of comparative anatomy.

A SOCIETY for the encouragement of the study of natural science has recently been formed at the University of Edinburgh. In commemoration of the fact that Darwin was once a student of the University and a member of a similar society, it has been named the Darwinian Society. The inaugural address is to be delivered by the President, Prof. J. Cossar Ewart. Mr. J. Graham Kerr (late naturalist to the Pilcomayo Expedition) is chairman.

THE anniversary meeting of the Mineralogical Society will be held on Tuesday, November 10, at 8 o'clock. After the election of officers and Council, the following papers will be read:—analysis of aragonite from Scotland, by J. Stuart Thomson; on minerals from the apatite mines near Risör, Norway, by R. H. Solly; notes on the minerals from the hematite deposits of West Cumberland, by the same; mineralogical notes from Torreon, Chihuahua, by Henry F. Collins; on the pinite of Breage in Cornwall, by J. H. Collins; on the occurrence of danalite, by H. A. Miers and G. T. Prior.

ON Tuesday, Dr. Burdon Sanderson delivered the first of the Croonian Lectures before the College of Physicians in the new lecture-room at the Examination Hall. The remaining lectures will be given on the next three Tuesdays of November. The subjects are the etiology of inflammation and of the acute specific diseases, and natural and acquired immunity.

SIR DOUGLAS GALTON, F.R.S., has been asked to investigate and report upon the sanitary state of Florence. He is to make any recommendations and suggestions that he may deem necessary.

AT a meeting of the Senate of the University of Sydney on September 21, it was resolved that Prof. Thorpe and Prof. Ramsay should be asked to select and appoint a Demonstrator of Chemistry to take office at the Sydney University on March 1 next, the salary to be at the rate of £350 per annum, and £60 to be allowed for passage money, such sum to be refunded if the Demonstrator should resign his office before the expiration of two years from his appointment. The appointment of a new Demonstrator has been rendered necessary by the resignation of Mr. F. B. Guthrie, who has been made Analyst to the Department of Agriculture.

THE Society of Arts has completed its arrangements for the approaching session. The first meeting will be held on Wednesday, November 18, when the opening address will be delivered by the Attorney-General, Chairman of the Council. At subsequent ordinary meetings (four of which, in addition to the opening meeting, will be held before Christmas) the following lectures will be delivered:—Measurement of lenses, by Prof. Silvanus P. Thompson, F.R.S.; secondary batteries, by G. H. Robertson; the World's Fair at Chicago, 1893, by James Dredge; spontaneous ignition of coal, and its prevention, by Prof. Vivian B. Lewes; burning oils for lighthouses and lightships, by E. Price Edwards; dust, and how to shut it out, by T. Pridgin Teale; typological museums, by General Pitt Rivers; Iceland, by T. Anderson; artistic treatment of jewellery and personal ornament, by J. W. Tonks; agricultural banks for India, by Sir William Wedderburn. The following Cantor Lectures will be given on Monday evenings:—The pigments and vehicles of the old masters, by A. F. Laurie (three lectures, November 30, December 7, 14); developments of electrical distribution, by Prof. George Forbes, F.R.S. (four lectures, January 25, February 1, 8, 15); the uses of petroleum in prime movers, by Prof. William Robinson (four lectures, February 29, March 7, 14, 21); mine surveying, by Bennett H. Brough (three lectures, March 28, April 4, 11); recent contributions to the chemistry and bacteriology of the fermentation industries, by Dr. Percy Frankland (four lectures, May 2, 9, 16, 23). A special course of six lectures, under the Howard Bequest, will be delivered on Friday evenings:—The development and transmission of power from central stations, by Prof. W. Cawthorne Unwin, F.R.S. (February 5, 12, 19, 26, March 4, 11).

LAST week the Speaker of the House of Commons, responding to a toast at the annual Mayoral banquet at Warwick, gave some sensible advice about technical education. He was afraid, he said, that there was great danger of the sums granted for the promotion of technical education being frittered away. What they wanted to teach was not a trade, not the particular manipulation of the article students might have to deal with in after life, but the principles of science as applicable to the art. Their object should be to elevate the students above the mere manual dexterity of the special professions to which they were to belong.

ON November 12, Mr. E. J. Humphery will read a paper before the Camera Club on a new method of photography by artificial light. According to the Journal of the Camera Club, Mr. Humphery promises a process of considerable novelty and value in practical work.

DR. ELISHA GRAY lately read before the Chicago Electric Club a paper in which he urged the importance of the International Congress of Electricians which is to be held in connection with the World's Fair at Chicago in 1893. The Congress, he thinks, should be divided into sections according to the various interests represented, one section being devoted to the purely scientific aspects of the subject. "Success," he said, "will be assured from the beginning if all our interested friends act harmoniously, and are actuated by one common desire that the best thing shall be done, without regard to geographical boundaries or local prejudices." Commenting on the paper, Mr. Parker pointed out that, owing to the supremacy which America enjoys in the practical development of industrial electricity, the electrical department would be the most interesting and attractive feature of the Exhibition. He held, therefore, that the directors of the Exhibition should give priority to this department in all arrangements, and should do all in their power to render the Electrical Congress a successful gathering.

PROF. WARD, the mineralogist, of Rochester, New York, has offered to send his collection of geological specimens to the Chicago Exhibition. It is said to be one of the most valuable collections in the United States.

ON Wednesday, October 28, a terrible earthquake visited Nipon, the island which forms the larger part of the Japanese Empire. The area over which the shocks were felt was wider than was at first supposed. It extended inland to the region of the lakes. The principal shock lasted less than two minutes, but was of extreme violence. The subsequent shocks were not strong enough to have done damage in ordinary circumstances, but they sufficed to shake down walls already cracked, and added immensely to the terrors of the night. The *Times* correspondent, telegraphing from Hiogo on November 2, says that great fissures had appeared in the ground at many points, rendering roads impassable and travelling dangerous; and that there had been a remarkable subsidence of the land to some depth over large tracts of country. The volcanic mountain Nakusan belched forth enormous masses of stones and continuous streams of sand and mud, and the contour of the mountain has been completely changed by the eruption. The greatest havoc seems to have been caused at Ogaki, where at least 1000 persons were killed, chiefly by falling buildings. Both there and at Gifu the earthquake was followed by fires, in which many perished. At Kitagata, Ichinomiya, Tiraguna, Kiyonsu, Kamatsu, and other places, chiefly along the coast, great damage was done. The city of Nagoya suffered to a less extent, although seriously. Much distress prevails in the ruined towns, and the Government is embarrassed in its efforts by the prevailing panic, and the absence of means of communication, telegraph lines and many miles of railway having been destroyed. Exact details as to the extent of the calamity will probably not be obtained for some time. On November 2 the following was the official estimate: killed, 4000 persons; injured, fully 5000; houses destroyed, 50,000.

A GREAT rush of migratory birds seems to have passed over Dublin during the night of May 4 last, evidently on the way to their northern breeding-haunts. An account of the matter is given by Mr. Allan Ellison in the new number of the *Zoologist*. "While sitting in our rooms in Trinity College, about 11 p.m.," he says, "we were attracted by the loud call-notes of birds passing overhead. The night was calm and cloudy, not very dark. We listened at the open window until about 1 a.m., when they seemed to be still passing over in undiminished numbers. They were mostly golden plovers and dunlins, easily recognized by their notes, but we frequently heard the cry of the whimbrel, or the shrill call of the common sandpiper. It was most curious to hear these notes, at first far away towards the south-west, gradually becoming louder as the flocks drew nearer and passed overhead, and then rapidly passing away to the northward. Sometimes the whole air seemed full of their clear whistling notes: in one direction the loud, short pipe of the golden plover, in another the shrill wheezing cry of the dunlin, reminding one of the sound made by a whistle with a pea in it. Sometimes a bird or two would fly quite close over the house-tops, uttering its loud whistle close to the open window, but they seemed for the most part to fly at a great height."

ONE large meteorite and two fragments were lately received by the Government Central Museum, Madras, through the Board of Revenue. Mr. Edward Thurston, the Superintendent of the Museum, quotes in his report for 1890–91 the following statement, by the Tahsildar of Tirupatúr, in the Salem district, as to the conditions under which these stones fell:—"On June 4, 1890, about 8 a.m., there was a sudden clap of thunder, accompanied by an unusual rumbling noise. At this time two stones are said to have fallen in the village of Kakangarai. The fall of both the stones occurred at the same time in adjacent fields, and was witnessed by rayats, who were ploughing close by at the time. One stone appears to have been broken up and divided among the rayats, while the other was taken charge of by the village munsif. The large specimen weighs $11\frac{1}{4}$ ounces, and the fragments weigh about 1 ounce and $\frac{1}{5}$ ounce respectively."

THE sponge trade of the Bahama Islands forms the subject of an excellent report by the U.S. Consul at Nassau. The number of persons engaged in this industry in the Bahamas is from 5000 to 6000, all of whom, except the shipowners, brokers, and skippers are coloured people. The sponges are gathered by means of iron hooks attached to long poles. By using a water-glass the fisherman can readily discover the sponges at the bottom, and then with his pole and hook he will bring up those he may select as fit for his purpose, leaving the smaller ones untouched. Some sponges adhere firmly to the bed of the sea, while others—known as "rollers"—are not attached at all. About ten years ago an attempt was made to introduce dredges, but it seemed likely that they would ruin the beds, and a law was passed forbidding their use. The vessels are provided and fitted out, as a rule, for a voyage of about six weeks, and generally from six to eight voyages are made in the year. It is difficult to estimate the average catch per trip, as the cargoes vary greatly in size and value. Of the larger sponges a catch of 5000, or of the smaller ones 7500, would be considered a fair lot. Occasionally a cargo of from 12,000 to 15,000 large sponges has been brought in, but this success is exceptional. Contradictory statements are made as to the time taken by sponges to grow to the size at which they are wanted. It seems probable, however, that under ordinary conditions a healthy sponge will reach a marketable size in from twelve to eighteen months.

EXTENSIVE excavations of the prehistoric mounds in Ohio and Indiana have lately been carried on under the supervision of Prof. Putnam. In one mound, near Anderson Station, Indiana, 7232 flint spear-heads and knives have been discovered. They were found in a layer one foot thick, extending over a space of twenty by thirty feet. They are made of grey flint found only in Indiana. The largest find of flint implements previously made in America did not include more than 1800 specimens.

STATISTICS published by the French Ministry of Public Instruction show that there are in France 525 learned Societies, of which 135 have been officially recognized as of national importance. Of these 525 Societies, 95 are historical and social; 95 agricultural and horticultural; 57 medical and pharmaceutical; 45 scientific; 41 artistic; 37 geographical; and the rest miscellaneous, including photographic, statistical, and ballooning associations.

PROF. KIKUCHI, of Tokyo, whose Japanese treatise on geometry we noticed briefly a year or two since, has now published a translation of his work into English. In the first Japanese Parliament Prof. Kikuchi had the honour to be made a life member of the House of Peers by the Emperor ("this does not constitute peerage as in England"), and at the request of the Department of Agriculture and Commerce he was one of the original framers of the Weights and Measures Bill.

THE Cambridge University Press has published a second edition of Mr. S. L. Loney's "Treatise on Elementary Dynamics." The book is intended for beginners, the author having dealt only with those parts of dynamics which can be treated without the use of the infinitesimal calculus. In the present edition the work has been carefully revised and somewhat enlarged.

THE first part has now been issued of the *Zeitschrift für Pflanzenkrankheiten*, edited by Dr. Paul Sorauer, with the assistance of an "International Phytopathological Committee." The journal is intended to be published bi-monthly, at a subscription of 15 marks per annum; and will contain original articles, reviews, and news, extending over the whole subject of the diseases of plants and the remedies for these diseases.

MESSRS. CASSELL AND CO. have issued Part 37 of their "New Popular Educator." Besides many illustrations in the text, there is a coloured plate representing sea-jellies and sea-stars.

FREE hydroxylamine, NH_2OH, has been isolated by M. Lobry de Bruyn, and a preliminary account of its mode of preparation and properties is published by him in the current number of the *Recueil des travaux chimiques des Pays-Bas* (1891, 10, 101). The manner in which the free base was obtained was briefly as follows. About a hundred grams of hydroxylamine hydrochloride, $NH_2OH.HCl$, were dissolved in six hundred cubic centimetres of warm methyl alcohol. To this solution a quantity of sodium dissolved in methyl alcohol was added, in such proportion that the hydrochloride of hydroxylamine was present in slight excess over and above that required to convert it to sodium chloride. After deposition of the separated sodium chloride the solution was decanted and filtered. The greater portion of the methyl alcohol was next removed by distillation under the reduced pressure of 160–200 mm. The remainder was then treated with anhydrous ether, in order to completely precipitate the last traces of dissolved sodium chloride. The liquid eventually separated into two layers, an upper ethereal layer containing about 5 per cent. of hydroxylamine, and a lower layer containing over 50 per cent. of hydroxylamine, the remainder of the methyl alcohol, and a little dissolved salt. By subjecting this lower layer to fractional distillation under 60 mm. pressure, it was separated into three fractions, of which the first contained 27 per cent. of hydroxylamine, the second 60 per cent., and the third crystallized in the ice-cooled receiver in long needles. This third fraction consisted of free solid NH_2OH. Hydroxylamine as thus isolated in the free state is a very hygroscopic substance, which rapidly liquefies when exposed to air, owing to the absorption of water. The crystals melt at 33°, and the fused substance appears to possess the capability of readily dissolving metallic salts. Sodium chloride is very largely soluble in the liquid; powdered nitre melts at once in contact with it, and the two liquids then mix. Free hydroxylamine is without odour. It is heavier than water. When rapidly heated upon platinum foil it suddenly decomposes in a most violent manner, with production of a large sheet of bright-yellow flame. It is only very slightly soluble in liquid carbon compounds such as chloroform, benzene, ether, acetic ether, and carbon bisulphide. The vapour attacks corks, so that the solid requires to be preserved in glass-stoppered bottles. The free base appears also to act upon cellulose, for, upon placing a few drops of the melted substance upon filter paper, a considerable amount of heat is evolved. The pure crystals are very stable, the base in the free state appearing to possess much greater stability than when dissolved in water. The instability of the solution appears, however, to be influenced to a considerable extent by the alkalinity of the glass of the containing vessel, for concentrated solutions free from dissolved alkali are found to be perfectly stable. Bromine and iodine react in a remarkable manner with free hydroxylamine. Crystals of iodine dissolve instantly in contact with it, with evolution of a gas and considerable rise of temperature. Bromine reacts with violence, a gas again being explosively evolved and hydrobromic acid formed. The nature of the gas evolved is now undergoing investigation. A letter from M. Lobry de Bruyn appears in the number of the *Chemiker Zeitung* for October 31, warning those who may attempt to prepare free hydroxylamine by the above method that it is a dangerously explosive substance when warmed to a temperature of 80°–100°. Upon warming a flask containing the free solid base upon a water-bath a most violent explosion occurs. A spontaneous decomposition appears to set in about 80°, and even in open vessels the explosion is very violent. Care must also be taken during the fractional distillation of the concentrated solution in methyl alcohol to cool the apparatus before changing the receiver, as if air is admitted while the retort is heated the experiment ends with an explosion.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus* ♀), two Macaque Monkeys (*Macacus cynomolgus* ♂ ♀), a Bonnet Monkey (*Macacus sinicus* ♀) from India, two Roseate Cockatoos (*Cacatua roseicapilla*), a Greater Sulphur-crested Cockatoo (*Cacatua galerita*), two Cockateels (*Calopsitta novæ-hollandiæ*) from Australia, presented by the Rev. Sidney Vatcher; two Rhesus Monkeys (*Macacus rhesus* ♂ ♂) from India, presented by Mr. John H. Taylor; a Macaque Monkey *Macacus cynomolgus* ♂) from India, presented by Mr. K. A. Williams; a Yak (*Poëphagus grunniens* ♂) from Tibet, presented by Mr. M. E. C. Ingram; a Corn Crake (*Crex pratensis*), British, presented by Mr. E. Hart, F.Z.S.; two Woodcocks (*Scolopax rusticola*), British, presented respectively by Mr. Hamon Le Strange. F.Z.S., and Mr. William Bellamy; two Water Vipers (*Cenchris piscivorus*), a Water Rattlesnake (*Crotalus adamanteus*) from Florida, presented by the Natural History Society of Toronto; a Small-scaled Mastigure (*Uromastix microlepis*) from Persia, presented by Mrs. Howell; an Alligator (*Alligator mississippiensis*) from the Mississippi, presented by Mr. W. Chattaway; two Bearded Vultures (*Gypaëtus barbatus*), European, deposited; a Molucca Deer (*Cervus moluccensis*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE TELLURIC SPECTRUM.—Dr. Müller has made some observations of the telluric spectrum on the summit of the Säntis, and his results are given in a recent publication of Potsdam Observatory (vol. viii., No. 27). The observing station was situated at a height of 2500 metres above sea-level. It was found that when the sun had a mean altitude, about 40 per cent. of the lines due to the water vapour in the atmosphere were quite invisible, and the remainder were very weak. Whilst the zenith distance of the sun was less than 60°, the appearance of the spectrum remained unchanged. At greater zenith distances the weak lines increased in intensity and the missing ones gradually appeared. Measurements of the intensities of single lines observed on different days and at different zenith distances indicate a variation roughly proportional to the thickness of atmosphere traversed. The aspect of the portion of spectrum observed was on the whole strikingly similar to that seen when observations were made near sea-level on dry and cold days. This is in agreement with the fact that the vapour pressure on mountains in summer is approximately equal to that on the plains in winter. Careful estimations of the intensities of the atmospheric lines at C and D might therefore be utilized to determine the decrease of the amount of vapour present in the air at different elevations. With regard to other atmospheric lines, Dr. Müller observed changes in the α-group. The whole of the lines of this group, however, were easily seen at the mountain station when the sun had a high altitude, and the difference of intensity there and in the plains was considerably less than in the groups C and D. Two maps are given illustrating the appearance of the lines in the neighbourhood of C and D for different zenith distances of the sun.

TEMPEL-SWIFT'S PERIODIC COMET.—The following ephemeris is given by M. Bossert in *Astronomische Nachrichten*, No. 3063:—

Ephemeris for Paris Midnight.

1891.	Right Ascension.	Declination.	Brightness.
	h. m. s.	° ′	
Nov. 3	21 31 22	+ 7 49·6	10·1
,, 5	21 37 6	8 37·5	
,, 7	21 43 17	9 27·7	
,, 9	21 49 59	10 19·3	
,, 11	21 57 13	11 15·1	11·9
,, 13	22 4 59	12 12·1	
,, 15	22 13 19	13 11·2	
,, 17	22 22 14	14 12·0	
,, 19	22 31 45	15 14·4	13·5
,, 21	22 41 54	16 18·0	
,, 23	22 52 41	17 22·2	
,, 25	23 4 6	18 26·6	
,, 27	23 16 9	19 30·5	14·4
,, 29	23 28 48	20 33·2	
Dec. 1	23 42 1	21 33·9	
,, 3	23 55 46	22 31·8	
,, 5	0 9 57	23 26·2	14·0
,, 7	0 24 30	24 16·3	
,, 9	0 39 18	25 1·4	
,, 11	0 54 15	25 41·0	
,, 13	1 9 13	26 14·9	12·0

The comet is moving north at the rate of 1° per day. It will be in Pegasus all this month, and will pass about 4° north of α Pegasus (Marcab) near the 23rd inst. The maximum brightness is reached at the end of the month.

CATALOGUE OF RUTHERFURD'S PHOTOGRAPHS.—A year ago Dr. Lewis Rutherfurd presented to the Observatory of Columbia College all his photographic negatives taken between